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Filed : April 15, 2004

REMARKS

Claims 9, 22, 30 and 31 are amended. Support the amendment to Claim 9 can be found in the specification, for example, at page 10, lines 22-25, and Example 2. Claim 22 is amended to change dependency in view of the cancellation of Claim 21. Claims 30 and 31 are amended to clarify the claim language and not to change the scope of the claims. No new matter is added by the amendments.

Claims 18-21 are canceled without prejudice to, or disclaimer of, the subject matter contained therein. Applicants maintain that the cancellation of a claim makes no admission as to its patentability and reserve the right to pursue the subject matter of the canceled claim in this or any other patent application.

New Claims 32-34 are submitted herewith. Support for new Claims 32 and 33 is found in the specification, for example, at page 8, lines 15-22 and page 40, lines 15-25. Support for new Claim 34 is found in the claims as originally filed, and in the specification, for example, at page 3, line 18, through page 4, line 9. No new matter is added by the new claims.

Applicant respectfully requests entry of the amendments and reconsideration of the application in view of the amendments and the following remarks. Upon entry of the amendments, Claims 9 and 22-34 will be pending.

Rejection of Claims 30 and 31 under 35 U.S.C. §112, Second Paragraph

Claims 30 and 31 have been rejected under 35 U.S.C. §112, second paragraph as being indefinite.

Regarding Claim 30, the Office Action states that the term “type” is vague and indefinite. Applicants have amended Claim 30 to remove the objected-to term. Applicants submit that Claim 30 as amended is clear and definite, and, accordingly, respectfully request removal of this ground for rejection of the claim.

Regarding Claim 31, the Office Action states that the phrase “comprises/is” is vague and indefinite. Applicants have amended Claim 31 to remove the objected-to phrase and to replace it therewith the term “comprises.” Applicants submit that Claim 31 as amended is clear and definite, and, accordingly, respectfully request removal of this ground for rejection of the claim.

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Rejection of Claims 9 and 18-29 Under 35 U.S.C. §103

Claims 9 and 18-29 have been rejected under 35 U.S.C. §103 as being obvious over Mukunoki (US Pat No. 6,914,139), Muys (US Pat No. 5,391,472), Abe (JP 10-217379) and Mikura (US Pat No. 5,880,800).

Applicant respectively traverses this rejection.

Claim 9

Claim 9, as amended, is directed to a method for manufacturing an antistatic optical film comprising an antistatic layer at least one side of a liquid crystal display optical film, comprising the steps of: applying an aqueous solution or an aqueous dispersion comprising a water soluble or a water dispersible conductive polymer on and in contact with the optical film, wherein the water soluble or the water dispersible conductive polymer is a polythiophene; drying to form the antistatic layer; and applying a pressure sensitive adhesive layer on another side of the antistatic layer. The remaining claims depend from, or recite all elements of, Claim 9.

Mukunoki

Mukunoki teaches a process for preparation of a cellulose acylate film from a cellulose acylate solution. Mukunoki teaches that when the cellulose acylate film is used as a protective film of a polarizing plate, the film preferably has at least one antistatic layer containing electrically conductive material or a hydrophilic binder layer for adhesion onto the polarizer.

Mukunoki does not provide a method of manufacturing the antistatic optical film comprising the steps of applying an aqueous solution or an aqueous dispersion comprising the water soluble or water dispersible conductive polymer on the optical film.

Mukunoki does not provide an antistatic layer on at least one side of an optical film and a pressure sensitive adhesive layer on another side of the antistatic layer. Mukunoki does not teach or suggest a pressure-sensitive adhesive layer.

Muys

Muys teaches coating poly(3,4-ethylenedioxy-thiophene) dispersion in a aqueous solution on a polyethylene terephthalate film support. Muys teaches that this antistatic layer is used in black-and-white or colour photographic materials (column 3, lines 26-33 and column 8, lines 43-49).

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Muys does not provide an optical film used in a liquid crystal panel. Muys does not provide an antistatic layer on at least one side of an optical film and a pressure sensitive adhesive layer on another side of the antistatic layer. Muys does not provide a pressure-sensitive adhesive layer.

Abe

Abe teaches a conductive laminated antistatic film. Abe teaches the conductive laminated antistatic film contains the conductive polymer, polyaniline.

Abe does not provide an antistatic optical film comprising polythiophene.

Mikura

Mikura teaches a pressure-sensitive adhesive layer such as an acrylic pressure-sensitive adhesive layer on an optical base film for attaching to a liquid crystal cell.

Mikura does not provide an antistatic layer on at least one side of an optical film and a pressure sensitive adhesive layer on another side of the antistatic layer. Mikura does not teach or suggest an antistatic layer.

Claim 9 is not Obvious over the Cited References

Applicants submit that the method of Claim 9, as amended, is not obvious over Mukunoki, Muys, Abe and Mikura because the references cannot be properly combined so as to render obvious the claimed methods. In particular the teachings of Muys cannot be combined with the teachings of Mukunoki and Mikura so as to render obvious the invention of Claim 9.

The teachings of Muys are directed to subject matter so different than that of the teachings of Mukunoki and Mikura that one skilled in the art would not have had any reason to combine the teachings of Muys with the teachings of Mukunoki and Mikura. Muys teaches an antistatic layer that possesses good adherence to a hydrophobic polyester resin support and that can be subjected to stretching together with the support without losing its adherence thereto and without substantial coloration in heat-treatment during and following stretching. Muys at column 3, lines 17-25. Mukunoki only teaches the use of antistatic layers in conjunction with polarizing plates. Mukunoki at column 12, lines 31-53. Mikura provides nothing whatsoever regarding antistatic layers. Based on the teachings of Muys, one skilled in the art would use an antistatic layer for adherence and stretching properties. Based on the teachings of Mukunoki, one skilled in the art would use an antistatic layer in conjunction with polarizing plates. Based on the teachings of Mikura, one skilled in the art would not think to use antistatic layers with liquid crystal cells. Thus, absent further

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teachings, one skilled in the art would not consider the teachings of Muys when modifying the polarizing plate-containing structure of Mukunoki or the liquid crystal cells of Mikura because nothing in Muys relates to the teachings of Mukunoki or Mikura. As such, Muys, Mukunoki and Mikura cannot be combined in such a way as to render the claimed methods obvious.

Abe does not stand for the proposition that the teachings of Muys can be applied to the teachings of Mukunoki so as to incorporate Muys' polymer into liquid crystal displays. Abe teaches use of polyaniline as a conductive polymer. In contrast, Muys teaches use of polythiophene. Abe's conductive polymer is completely different from Muys' polythiophene. Although Abe teaches that the polyaniline-containing conductive polymer can be used in a "magnetic tape, OHP, shielding material, LCD, thermal paper, television paper, a photographic film, a lithographic plate, etc" Abe's teachings of using a polyaniline-containing conductive polymer cannot be applied to the use of polythiophene as taught by Muys because Abe's conductive polymer is completely different from Muys' polythiophene. As such, the teachings of Abe would not lead one of ordinary skill in the art to consider that Muys' polythiophene could be used in liquid crystal displays, much less used according to the teachings of Mukunoki in the preparation of liquid crystal displays.

Furthermore, Applicants maintain that the Muys reference is non-analogous to the presently claimed methods, and therefore cannot be relied on to reject the presently claimed invention. The teachings of Muys are directed to antistatic layers for photographic film. See, *e.g.*, Muys at column 1, lines 43-56 and column 3, lines 17-25. Muys is not directed to use of antistatic layers reducing the static electricity generated in case of peeling of the surface protective film from liquid crystal display panels, as are Applicants. Thus, Muys teaches use of an antistatic layer in a different structure for a different purpose (prevention of ion diffusion in photographic film) than the presently claimed methods, which are directed to protecting liquid crystal displays. Accordingly, the teachings of Muys are directed to a different field of endeavor than the presently claimed methods. As Applicants have discussed above, Abe does not render the teachings of Muys analogous to the claimed methods. Abe's conductive polyaniline is completely different from Muys' polythiophene. Further, Applicants' claims are directed to methods that utilize polythiophene as a conductive polymer. As such, the teachings of Abe would not lead one of ordinary skill in the art to consider that Muys' polythiophene could be used in liquid crystal

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displays, nor would the teachings of Abe lead to a modification of Muys that would lead to the claimed methods. Accordingly, the teachings of Abe would not lead one of ordinary skill in the art to consider the teachings of Muys as analogous to Applicants' claimed methods.

In view of the above, the method of Claim 9 is not *prima facie* obvious because the two remaining references, Mukunoki and Mikura, do not teach or suggest all elements of the claims. Applicants submit that Mukunoki does not teach or suggest a method of manufacturing the antistatic optical film comprising the steps of applying an aqueous solution or an aqueous dispersion comprising the water soluble or water dispersible conductive polymer on the optical film. Mikura does not teach or suggest an antistatic layer. Accordingly, Mikura does not teach or suggest that which is missing in Mukunoki. As such, no combination of Mukunoki and Mikura, teaches or suggests all elements of Claim 9 or any claim dependent therefrom.

New Claims 32 and 33 are Further Non-Obvious Over the References

Applicants submit that new Claims 32 and 33 are further non-obvious over the cited references. New Claim 32 is directed to the method of Claim 9, wherein the antistatic optical film is applied to a first side of a liquid crystal display, wherein said first side of the liquid crystal display does not have a conductive layer, wherein the liquid crystal display has a liquid crystal cell in IPS mode or VA mode. New Claim 33 depends from new Claim 32. Thus, for all of the reasons cited above in regard to Claim 9, Applicants submit that Claims 32 and 33 are non-obvious over the cited references.

In addition to the reasons provided above, Applicants submit that Claim 32 is further non-obvious over the cited references because none of the cited references would lead one of ordinary skill to apply the antistatic optical film to a side of the liquid crystal display that does not have a conductive layer, wherein the liquid crystal displays have a liquid crystal cell in IPS mode or VA mode. None of the cited references, alone or combined, teach that the antistatic optical film is applied to a side of the liquid crystal display that does not have a conductive layer, much less such a configuration where the liquid crystal display has a liquid crystal cell in IPS mode or VA mode. The teachings of the cited references that disclose polythiophene-containing antistatic layers are not directed liquid crystal displays, and provide no reason why one of ordinary skill would apply a polythiophene-containing antistatic layer to a liquid crystal displays. That is, the purpose of the polythiophene-containing antistatic layers taught by the cited references is not

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related to their use in liquid crystal displays. Moreover, none of the cited references provide a basis for applying an antistatic optical film to a side of the liquid crystal display that does not have a conductive layer. None of the cited references are directed to such a liquid crystal display. As such, none of the cite references would lead one of ordinary skill in the art to perform a method of applying an antistatic layer onto such a liquid crystal display. Thus, none of the cited references, alone or combined, would lead to the method of Claim 32.

Furthermore, the properties of the antistatic optical film-containing liquid crystal display manufactured according to Claim 32 would have properties unexpected over the teachings of the references. Applicants have discovered that the claimed methods can yield liquid crystal displays that are uniform in appearance, have good optical qualities, and have very short time periods for a disordered liquid crystal display to return to its original state when applied to a side of the liquid crystal display that does not have a conductive layer. Applicants demonstrate these properties in Examples 1 and 2 of the specification in contrast to the properties of Comparative Examples 1 and 2 of the specification, and these properties are summarized in Table 1 of the specification. Nothing in the cited references would lead one of ordinary skill in the art to consider that application of an antistatic optical film to a side of the liquid crystal display that does not have a conductive layer would result in liquid crystal displays that are uniform in appearance, have good optical qualities, and have very short time periods for a disordered liquid crystal display to return to its original state. Accordingly, the properties of the product resultant from the claimed method would not be expected based on the teachings of the cited references. As such, these properties serve as evidence of the non-obviousness of the method of Claim 32 over the cited references. In view of the above, Applicants submit that Claims 32 and 33 further are non-obvious over the cited references.

New Claim 34 is Further Non-Obvious Over the References

Applicants submit that new Claim 34 is further non-obvious over the cited references. New Claim 34 is directed to a method for manufacturing an antistatic optical film comprising an antistatic layer at least one side of a liquid crystal display optical film, comprising: applying an aqueous solution or an aqueous dispersion comprising a water soluble or a water dispersible conductive polymer on and in contact with the optical film, wherein the water soluble or the water dispersible conductive polymer is a polythiophene, and wherein the optical film has optical

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properties which are deteriorated if an organic solvent is applied on and in contact with the optical film; drying to form the antistatic layer; and applying a pressure sensitive adhesive layer on another side of the antistatic layer.

New Claim 34 is non-obvious over the cited references because no reference recognizes that an organic solvent causes deterioration of optical properties of the optical film, and thus there is no reason to specifically combine the optical film and the polythiophene. None of the cited references provide any indication that an optical film's optical properties might be deteriorated if an organic solvent is applied on and in contact with the optical film. As such, none of the cited references provide a reason for doing what Applicants have done. Applicants have found that by applying an aqueous solution or an aqueous dispersion comprising a water soluble or a water dispersible conductive polythiophene polymer on and in contact with an optical film whose optical properties are deteriorated if an organic solvent is applied on and in contact with the optical film, a liquid crystal display can be prepared that is uniform in appearance, has good optical qualities, and has very short time periods for a disordered liquid crystal display to return to its original state. None of the cited references provide any reason for applying such an aqueous solution or an aqueous dispersion comprising a water soluble or a water dispersible conductive polythiophene polymer to such an optical film. As such, there is no reason to combine the cited references in the way that Applicants have done. "Although common sense directs one to look with care at a patent application that claims as innovation the combination of two known devices according to their established functions, it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does." *KSR Int'l. CO. v. Teleflex Inc.*, ____ U.S. ____ (2007) (emphasis added). No reason is provided in the cited references for applying the recited polythiophene polymer to an optical film that has optical properties which are deteriorated if an organic solvent is applied on and in contact with the optical film because the cited references did not recognize the problem. As such, no combination of the cited references would lead one of ordinary skill in the art to develop the method of Claim 34. Accordingly, Claim 34 is non-obvious over the cited references.

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Rejection of Claims 30 and 31 Under 35 U.S.C. §103

Claims 30 and 31 have been rejected under 35 U.S.C. §103 as being obvious over Mukunoki, Muys, Abe and Mikura, in further view of the specification's admissions of prior art. The Office Action states that the specification admits that it was known to combine a polarizing plate and a transparent protective film, to use retardation plates, and that such films/plates required protection. The Office Action further indicates that Abe teaches styrene polymer as the transparent protective film.

Applicants respectfully traverse.

Claims 30 and 31 are directed to particular embodiments of the method of Claim 9. Thus, for all of the reasons cited above in regard to Claim 9, Applicants submit that Claims 30 and 31 are non-obvious over the cited references.

Furthermore, Claim 30 also is non-obvious over the cited references because none of the cited references provides an antistatic layer as recited in Claim 9, that is applied on and in contact with a transparent protective film consisting of a material selected from the group consisting of polyethylenenaphthalate, acrylic polymer, styrene polymer, polycarbonate polymer, polyolefin polymer, vinyl chloride polymer, amide polymer, imide polymer, sulfone polymer, polyether sulfone polymer, polyether-ether ketone polymer, poly phenylene sulfide polymer, vinyl alcohol polymer, vinylidene chloride polymer, vinyl butyral polymer, allylate polymer, polyoxymethylene polymer, epoxy polymer, and a blend of the aforementioned polymers. The Office Action states that Abe discloses a styrene polymer at paragraph [0028]. However, paragraph [0028] describes the type of polymers that can be contained in the conductive layer of the conductive film of Abe, not the film on which the conductive layer is applied. Since the teachings of Abe's paragraph [0028] are directed to the conductive layer, such teachings are completely unrelated to the transparent protective film on which an antistatic layer as recited in Claim 9 is applied. As such, the disclosure of styrene polymer by Abe at paragraph [0028] is completely unrelated to Applicants' claims. Abe does not teach styrene polymer as the transparent protective film. Instead, Abe teaches applying the antistatic layer to a polyethylene terephthalate (PET) film. Thus, none of the references, Abe included, provides a transparent protective film consisting of a material selected from the group consisting of polyethylenenaphthalate, acrylic polymer, styrene polymer, polycarbonate polymer, polyolefin polymer, vinyl chloride polymer, amide polymer, imide polymer, sulfone polymer,

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polyether sulfone polymer, polyether-ether ketone polymer, poly phenylene sulfide polymer, vinyl alcohol polymer, vinylidene chloride polymer, vinyl butyral polymer, allylate polymer, polyoxymethylene polymer, epoxy polymer, and a blend of the aforementioned polymers. As such, no combination of the references can render obvious the method of Claim 30 because no combination of the references provides all elements of the claim.


CONCLUSION

In light of the Applicants' amendments to the claims and the foregoing Remarks, it is respectfully submitted that the present application is in condition for allowance. Should the Examiner have any remaining concerns which might prevent the prompt allowance of the application, the Examiner is respectfully invited to contact the undersigned at the telephone number appearing below.

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: 13-June-07 By: 
Kerry Taylor
Registration No. 43,947
Attorney of Record
Customer No. 20,995
(619) 235-8550

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061107